

### REMARKS

Claims 1-22 are currently pending in the Application. Claims 1-22 stand rejected. Claims 1, 10, and 12 are amended herein and Claims 9 and 22 are cancelled. Applicants respectfully traverse the rejections as follows.

#### **35 U.S.C. § 103(a) Rejections ~ Campbell**

Claims 1-7 and 9-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Campbell (U.S. Patent No. 2,102,678). Applicants respectfully traverse this rejection.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

*See*, M.P.E.P. §2142, *citing In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Campbell's failure to teach or suggest all of the claim recitations and the lack of suggestion or motivation to combine Campbell with known processes or compositions precludes a *prima facie* obviousness rejection.

The disclosure of Campbell is insufficient to support a *prima facie* obviousness rejection because Campbell fails to "teach or suggest all the claim limitations," which is a requirement for a *prima facie* obviousness rejection. *See, In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). The shortcomings of Campbell are admitted in the Action:

Campbell does not teach that the transfer liquid is mercury free, as stated in claim 1. Campbell does not teach the particular aqueous solution/material for the transfer liquid and the particular liquid/material for the expansion liquid, as stated in claim 9.... *See, Action* at p. 2, ¶ 2 (emphasis added).

Claim 1 recites that "the transfer liquid is a mercury free solution," which is not disclosed by Campbell. In addition, Claim 1 recites the transfer liquid is "selected from the group consisting of inorganic compounds, organometallic compounds, organic liquids, and ionic liquids," which is also absent from the disclosure of Campbell. Campbell's failure to teach or

suggest all of the recitations of Claim 1 precludes a *prima facie* obviousness rejection of Claim 1.

The Action alleges that a person of ordinary skill in the art at the time the invention was made would have experimented to arrive at the mercury free transfer liquid recited in Claim 1. The Examiner cites *In re Leshin*, 125 U.S.P.Q. 416, for the proposition that it is “a matter of obvious design choice and within the general skill of worker in the art to select a known material on the basis of its suitability for the intended use of the invention.” *See, Action* at p. 3 (emphasis added). There is no evidence, however, that mercury-free liquid/solutions were known to be used as transfer liquids in minimum/maximum thermometers at the time of the invention or that they would be suitable materials. Even Campbell fails to provide a suggestion that a mercury-free transfer liquid would be suitable for use in its device. In the absence of a suggestion that mercury-free liquid/solutions were suitable materials for use with minimum/maximum thermometers as recited in Claim 1, a person of skill in the art would not substitute a mercury free solution for the liquids used in Campbell. Therefore, Claim 1 is not obvious.

Even if mercury free solutions were used with maximum/minimum thermometers at the time the invention was made, there is no motivation or suggestion in the art or elsewhere to combine such solutions with the teachings of Campbell to arrive at the recitations of Claim 1. The allegation that the use of a mercury free solution is just an optimization that a person of skill in the art would accomplish is impermissibly based on hindsight. Without the disclosure of the present invention and the recitations of its claims, there is no suggestion or motivation in Campbell or in the art to use a mercury free solution in a maximum/minimum thermometer as recited in Claim 1. The lack of motivation precludes a *prima facie* obviousness rejection of Claim 1. *See, In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

In response to the Applicants' previous arguments regarding the lack of motivation to establish a *prima facie* obviousness rejection “the examiner recognizes that there should be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references (citations omitted).” *See, Action* at p. 11. However, no reason or motivation is provided. The Action does not provide a single motivation to use anything other than mercury with the Campbell reference. Although “optimization” is alleged, there is no

suggestion in Campbell or the art that the use of a mercury free solution would optimize the Campbell device. If a motivation other than the present application does exist to substitute the mercury of Campbell with a mercury free liquid, it is not disclosed in Campbell and is not obvious in the art. The lack of motivation precludes a *prima facie* obviousness rejection.

Claim 1 is not obvious in view of Campbell because a *prima facie* obviousness rejection is not supported by the reference or its combination with the art. Applicants respectfully request the allowance of Claim 1.

Claims 2-7 and 10-19 depend, either directly or indirectly, from Claim 1, which is not obvious. As dependent claims of a non-obvious independent claim, Claims 2-7 and 10-19 are also non-obvious. *See, In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988)(if an independent claim is nonobvious under 35 U.S.C. § 103 then any claim depending therefrom is nonobvious); *see also*, M.P.E.P. § 2143.03.

**35 U.S.C. § 103(a) Obviousness Rejections ~ Campbell in combination with Manske**

Claims 1-7, 9, and 12-19 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Campbell (U.S. Patent No. 2,102,678) and Manske (U.S. Patent No. 5,213,378). Applicants respectfully traverse this rejection.

Claim 1 is amended herein and Claims 2-7 and 12-19 depend therefrom. Claim 9 is cancelled. Claim 1 is not obvious in light of Campbell for at least the reasons previously recited herein. The combination of Manske with Campbell does not alleviate the lack of teaching in the references that precludes a *prima facie* obviousness rejection. In addition, the combination of references lacks an expectation of success and there is no motivation to achieve the combination.

The maximum/minimum thermometer of Claim 1 does not indicate whether or not a predetermined extreme temperature was reached as does the device of Manske. Instead, the recited maximum/minimum thermometer provides an indication of the maximum temperature and the minimum temperature achieved over a period of time. This can be contrasted with the Manske device, which is a single use disposable temperature indicator that only shows that a single predetermined extreme temperature has been reached or exceeded during a time period. Manske is not capable of exhibiting both the high and low temperatures reached during a

particular time period. Furthermore, Manske does not disclose indexes which would allow the measurement of the high and low temperatures reached during a particular time period. Thus, a person of skill in the art would not be motivated to combine a single-use, single temperature-indicating device as proposed by Manske with the Campbell device to arrive at a maximum/minimum thermometer as recited in Claim 1. The lack of motivation to combine Manske with Campbell to create a thermometer capable of displaying both a maximum and minimum temperature precludes a *prima facie* rejection. *See, In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

The combination of Manske and Campbell also fails to establish a *prima facie* obviousness rejection because there is no expectation that the combination of Manske and Campbell is possible to make obvious Claim 1. The separating substance 14 of Manske moves in response to an expansion liquid proposed by Manske, but the separating substance 14 does not move an index. There is no indication in Manske, or in Campbell, that the separating substance 14 of Manske could be used to move an index in place of the indicating thermometric liquid 24 of Campbell. The Action alleges that this is irrelevant because of the choice of terms "indexes capable of being moved." *See, Action* at p. 11. Claim 1 is amended herein and recites that the "indexes are moved by the transfer liquid." There is no expectation or motivation indicating that Manske's separating substance 14 could be successfully substituted for the indicating thermometric liquid 24 of Campbell to move the indexes. The lack of an expectation of success from the combination precludes a *prima facie* obviousness rejection based upon the combination. *See, In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

The combination of Campbell and Manske fails to establish a *prima facie* obviousness rejection of Claim 1. As dependent claims, Claims 2-7 and 12-19 are also non-obvious. *See, In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *see also*, M.P.E.P. § 2143.03.

#### **Rejection of Claims 8, 10-11, and 20-22**

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Campbell and Manske in further view of Bealing et al. (U.S. Patent No. 5,990,199).

Claims 10-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Campbell and Manske and in further view of Hickman (U.S. Patent No. 1,942,857).

Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Campbell and Manske and in further view of GB0001967/GB041882.

Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Campbell and Manske and in further view of Bernard (U.S. Patent No. 4,908,503).

Claim 22 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Campbell and Bernard.

Claim 22 is cancelled. Each of Claims 8, 10-11, and 20-21 depend from Claim 1, either directly or indirectly. As dependent claims of a nonobvious independent claim, Claims 8, 10-11, 20, and 21 are also nonobvious. *See, In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988)(stating that if an independent claim is nonobvious under 35 U.S.C. § 103 then any claim depending therefrom is nonobvious); *see also*, M.P.E.P. § 2143.03.

In Re: Hamilton et al.  
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### CONCLUSION

The concerns of the Examiner addressed in full, Applicants respectfully request withdrawal of the outstanding rejections and the issuance of a Notice of Allowance forthwith. The Examiner is encouraged to direct any questions regarding the foregoing to the undersigned, who may be reached at (919) 854-1400.

Respectfully submitted,

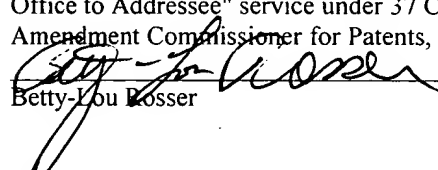


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